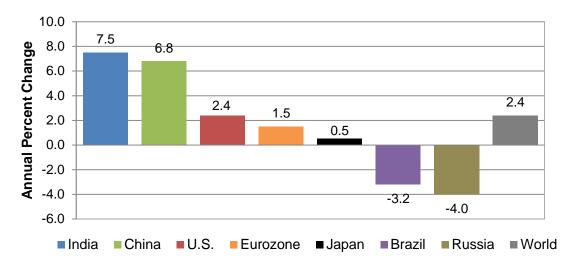
# **FAA Aerospace Forecasts Fiscal Years 2016-2036**

## **Economic Environment**

In the near term, IHS Global Insight projects that world economic growth will remain subpar, below 3% a year for the next two years. While growth remains sluggish to steady for the United States and Europe, the rest of the world is struggling and will continue to do so. In the United States, consumer spending is solid, fueled by lower oil prices and steady job growth while in 2015 Europe saw its best performance since 2011 as central bank stimulus and low oil and commodity prices provided the basis for growth. Japan's economy contracted in late 2015 and shows few signs of robust recovery any

time soon. In emerging markets, China is moving into a period of slower growth as 2015 was the slowest year since 1990 as the economy begins the transition from an export and manufacturing based economy to one that is more oriented towards the service and technology sectors. In 2015 real GDP in India grew an impressive 7.5% but was lacking balance as exports and investment led while private consumption lagged. Other emerging markets such as Brazil and Russia were in recession in 2015 and are not expected to see growth until 2017.

### India and China led World Economic Growth in 2015

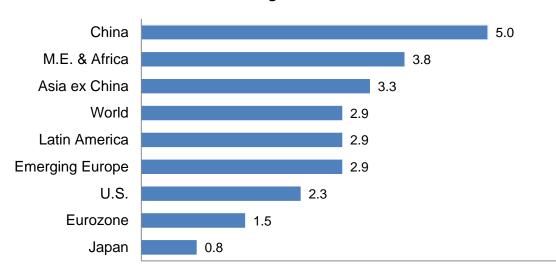


Source: IHS Global Insight

IHS Global Insight forecasts world real GDP to grow at 2.9 percent a year between 2016 and 2036. Emerging markets are forecast to grow above the global average but at lower rates than in the early 2000's. Asia (excluding Japan), led by India and China, is projected to have the fastest growth followed by Middle East and Africa, Latin

America, and Eastern Europe. Growth in the more mature economies will be lower than the global trend with the fastest rates in the U.S. followed by Europe. Growth in Japan is projected to be very slow with rates below 1% a year reflecting deep structural issues associated with a shrinking and aging population.

Asia and Africa/Middle East lead global economic growth
Annual GDP % growth 2016-2036

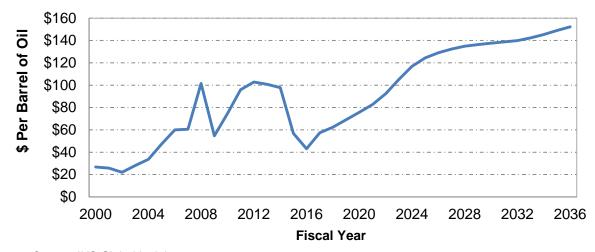


Source: IHS Global Insight, Dec 2015 World Forecast

Oil prices fell by 42% in 2015 to around \$57 per barrel and are projected to fall another 24% in 2016 to \$43 per barrel. However, the long run trend in oil prices is upward due to growing demand and higher costs of ex-

traction, and IHS Global Insight forecasts the price of oil to reach \$100 per barrel by 2023 and continue to rise modestly thereafter to \$152 by 2036.

**U.S. Refiners' Acquistion Cost** 



Source: IHS Global Insight

# U.S. Airlines

#### **Domestic Market**

Mainline and regional carriers<sup>1</sup> offer domestic and international passenger service between the U.S. and foreign destinations, although regional carrier international service is confined to the border markets in Canada, Mexico, and the Caribbean. Twenty-nine all-cargo carriers were providing domestic and/or international air cargo service at the end of 2015.

Shaping today's commercial air carrier industry are three distinct trends: (1) industry consolidation and restructuring; (2) continued capacity discipline in response to external shocks, and (3) the proliferation of ancillary revenues.

The restructuring and consolidation of the U.S. airline industry that began in the aftermath of the terror attacks of September 11, 2011 continued in 2015. American and US Airways combined their networks and reservations systems to form the world's largest airline with the last U.S. Airways flight occurring in October 2015. Consequently, there are now only four dominant airlines in the U.S. – American, Delta, Southwest, and United – controlling approximately 76% of the domestic market. It is highly unlikely the U.S. Government will approve any further mergers among these four due to anti-trust

regulations. In 2005 there were twelve major mainline airlines.

The mergers and increasing market presence of low cost carriers like Frontier, Jet-Blue and Southwest have had clear implications on the fares, size of the aircraft being used and the load factors, topics that will be discussed later in this document.

One of the most striking outcomes of industry restructuring has been the unprecedented period of capacity discipline, especially in domestic markets. Between 1978 and 2000, ASMs in domestic markets increased at an average annual rate of 4 percent a year, recording only two years of decline. Even though domestic ASMs shrank by 6.9 percent in FY 2002, following the events of September 11, 2001, growth resumed and by 2007, domestic ASMs were 3.6 percent above the FY 2000 level. However, U.S. domestic ASMS are still down 1.2 percent when compared to 2007 as the industry responded first to the sharp rise in oil prices (up 155% between 2004 and 2008) and then the global recession that followed (2009 to the present). 2015 is the first year showing strong growth in ASMs (4.6 percent) since 2004.

The reduction in domestic capacity since 2007 has not been shared equally between the mainline carriers and their regional counterparts. To better match demand to capacity, the mainline carriers contracted out "thin" routes to their regional counterparts because they could provide lift at a lower cost, or else they simply removed the capacity altogether. In 2015, the mainline carrier group provided 0.9 percent less ca-

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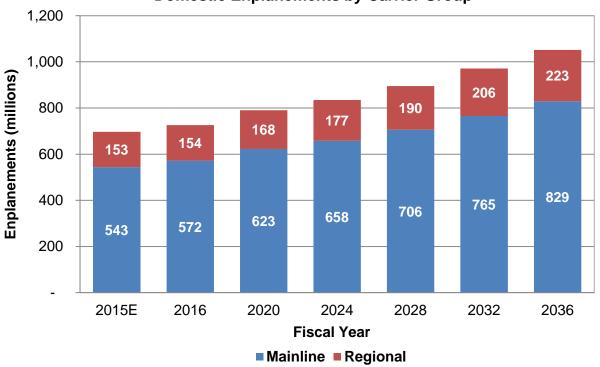
<sup>&</sup>lt;sup>1</sup> Mainline carriers are defined as those providing service primarily via aircraft with 90 or more seats. Regionals are defined as those providing service primarily via aircraft with 89 or less seats and whose routes serve mainly as feeders to the mainline carriers.

pacity than it did in 2007 (but carried 2.1 percent more passengers thus load factors increased). Capacity flown by the regional group has shrunk by 3.0 percent over the same period (with passengers carried down 2.1 percent).

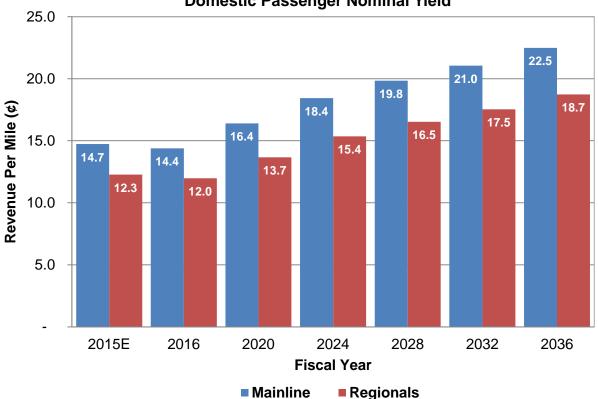
The regional market has continued to shrink as the regionals compete for even fewer contracts with the remaining dominant carriers; this has meant slow growth in enplanements and yields.

U.S. Commercial Air Carriers

Domestic Enplanements by Carrier Group







The regionals have less leverage with the mainline carriers than they have had in the past as the mainline carriers have negotiated contracts that are more favorable for their operational and financial bottom lines. Furthermore, the regional airlines are facing large pilot shortages and tighter regulations regarding pilot training. Their capital costs have increased in the short-term as they continue to replace their 50 seat regional jets with more fuel efficient 70 seat jets. This move to the larger aircraft will prove beneficial in the future however since their unit costs are lower.

Another continuing trend is that of ancillary revenues. Carriers generate ancillary revenues by selling products and services beyond that of an airplane ticket to customers.

This includes the un-bundling of services previously included in the ticket price such as checked bags and on-board meals, and by adding new services such as boarding priority and internet access. As noted earlier, U.S. passenger carriers posted record net profits for the sixth consecutive year in 2015 with ancillary revenues a contributing factor to the favorable outcome as well as very low oil prices. Airlines are also increasingly experimenting with segmenting their cabins into more discreet cost categories based on comfort amenities like seat pitch, leg room, and access to social media and outlets.

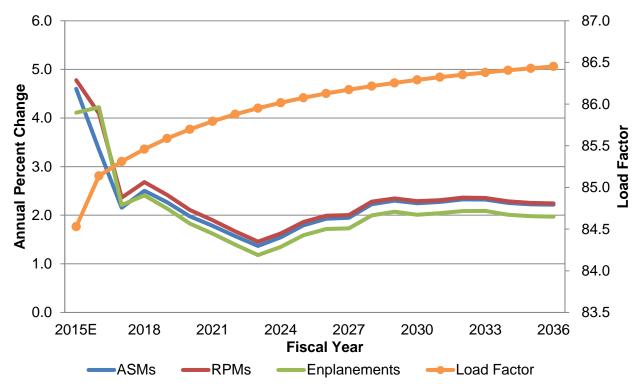
U.S. commercial air carriers' total number of domestic departures continued the downward trend that started in 2008 while ASMs.

RPMs and enplanements all showed a rebound; these trends underlie the expanding size of aircraft and higher load factors. In 2015, the domestic load factor reached a historic high of 84.5 for commercial air carriers. It is presently assumed that the load factor will not exceed 86.5 in the future due to the logistical difficulties inherent in matching supply perfectly with demand.

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<sup>&</sup>lt;sup>2</sup> Commercial airlines encompass both mainline and regional carriers.





System, that is, the sum of domestic plus international capacity, increased 3.9 percent to 1.066 trillion ASMs in 2015 while RPMs increased 3.8 percent to 889.1 billion. During the same period system-wide enplanements increased 3.8 percent to 785.8 million. In 2015, U.S. carriers prioritized the domestic over the international market in terms of allocating capacity. It is forecast that this allocation will continue into 2016 but carriers will start expanding capacity in the international market starting in 2017 and remain focused on that growth market through 2036 as the domestic market continues to mature.

U.S. mainline carrier enplanement growth in the combined domestic and international market was 5.1 percent in 2015 while regional carriers carried 1.1 percent fewer passengers.

In the domestic market, mainline enplanements saw an increase for the fifth consecutive year, up 5.6 percent, marking the first time since 2000 that the industry recorded five consecutive years of passenger growth in the domestic market. Mainline passengers in international markets posted a sixth year of growth, up 2.4 percent.

Even though the recession was officially over in June 2009, carriers continued to face demand uncertainty in 2015 as wages continued to stagnate, household income growth was weak, the housing market's recovery was patchy across the country, and government spending at the federal and local levels remained stagnant and are pro-

jected to remain so for the next few years. Despite these dire statistics, the unemployment rate fell and consumer spending was up and many urban housing markets have been revived strongly. In such an uneven, but slowly improving, environment, industry capacity growth was restrained (up 3.9 percent), after only a 2.3 percent increase in 2014. Higher airfares and ancillary revenues, coupled with falling fuel prices result-

ed in U.S. carriers finishing up 2015 with a strong net profit.

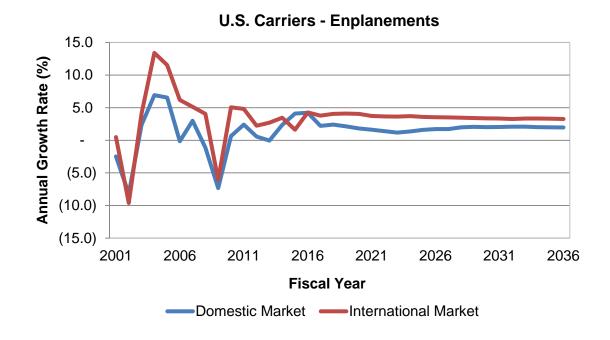
System load factor and trip length remained flat in 2015, even as seats per aircraft mile increased by 2.4 percent; again reflecting the trend towards using larger aircraft. Seats per aircraft mile system wide increased to 149.1 seats (up 3.5 seats per aircraft mile), the highest level since 1994.

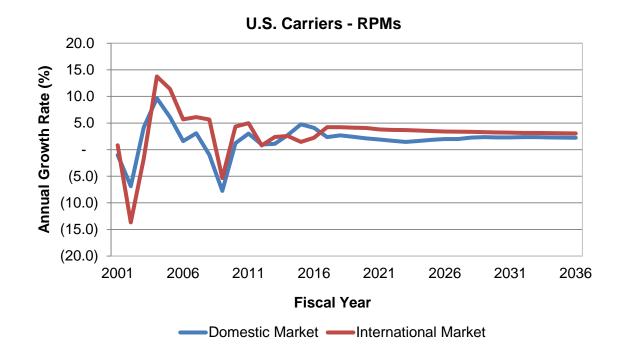
### **International Market**

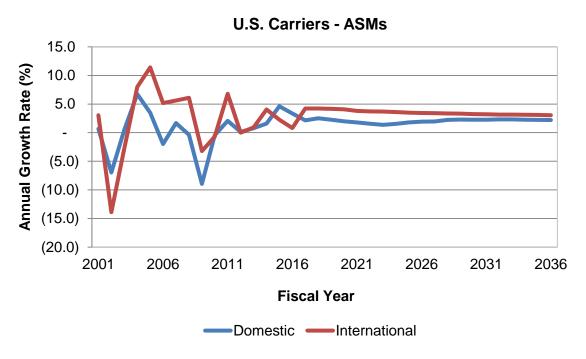
The international market continues to be the growth segment for U.S. carriers when compared to the mature U.S. domestic market, especially since FY 2004. Last year, 2015, was an exception to the trend and 2016 is expected to follow suit as airlines continue to focus on the domestic market. Starting in 2017 the international market (comprised of mainline and regional carriers) should again start outpacing the domestic market in terms of enplanements,

RPMs and ASMs at an average annual rate (FY 2017-2036) of 3.6%, 3.5%, and 3.5% respectively.

While the financial situation across the world has weakened somewhat, lower fares enabled by falling oil prices and more efficient aircraft has boosted demand; at least in the short term. It is possible that historically low oil prices signal further weakening in the global economy and thus, lower travel demand in the future.

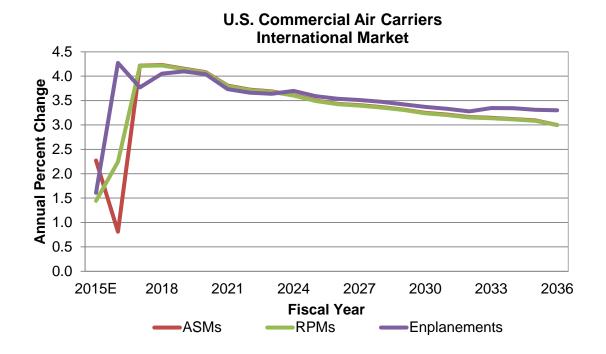






The next five years will feature a rebuilding of international demand by the U.S. carriers with moderate growth averaging around 3.6, 3.5, and 3.5 for enplanements, RPMs, and ASMs respectively. Airlines will exercise

capacity restraint and the load factor is expected to stabilize around 81.8%. Load factors this high were last seen in 2013.

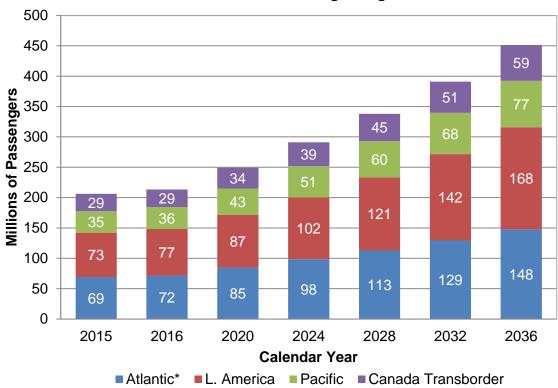


Overall however, U.S. carrier market share of international passengers has been dropping in all regions with the exception of the Caribbean, Oceania and Central America. It is expected that these trends will continue.

U.S. Carrier Enplanement Market Share by Region 100% Caribbean 90% Mexico 80% —Central America % of Market Share 70% South America All Countries 60% —Canada 50% Africa 40% Europe -Asia 30% Oceania -20% Middle East 10% 2011 2012 2013 2015 2014 Calendar Year

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# Total Passengers To/From the U.S. American and Foreign Flag Carriers



Source: US Customs & Border Protection data processed and released by Department of Commerce; data also received from Transport Canada

For U.S. carriers, Latin America is still the largest international destination despite the recent economic and political crises of Brazil. While 2014 saw 7.5% growth, 2015 still showed a very robust 5.1% increase. In contrast, the Pacific region saw 0% enplanement growth and the Atlantic region saw a drop of 1.3%. It is expected that the Latin American market will continue to be the growth market for travel to and from the U.S.

Despite the economic powerhouses of China, Japan and South Korea, the Pacific region remains a relatively small market for the U.S. and will remain so for the next twenty years. While travel to the US will

grow approximately 3.8% per year from 2016-2036 for all carriers, the majority of travel demand in that region will be intra-Asian.

Both the Atlantic and Canada regions are mature and will experience enplanement growth of 3.7% and 3.6%, respectively, on average over the twenty year period for all carriers. It is unclear at this time if the Syrian refugee crisis and terrorism threats will affect travel demand in 2016 and beyond.

Despite the recent economic downturn in Latin America, it is still the largest driver of international demand to the U.S. Mexico, the most popular destination, is forecast to

<sup>\*</sup> Per past practice, the Mid-East region and Africa are included in the Atlantic category.

experience 4.2% annual growth from 2016-2036 for all carriers whereas the entire region is forecast to grow 4.0%

### Cargo

Air cargo traffic contains both domestic and international freight/express and mail. The demand for air cargo is a derived demand resulting from economic activity. Cargo moves in the bellies of passenger aircraft and in dedicated all-cargo aircraft on both scheduled and nonscheduled service. Cargo carriers face price competition from alternative shipping modes such as trucks, container ships, and rail cars.

U.S. air carriers flew 35.9 billion revenue ton miles (RTMs) in 2015, up 2.2 percent from 2014 with domestic cargo revenue ton miles (RTMs) increasing 3.3 percent to 13.1 billion while international RTMs increased by 1.6 percent to 22.9 billion. Air cargo RTMs flown by all-cargo carriers comprised 78.1 percent of total RTMs in 2015, with passenger carriers flying the remainder. Total RTMs flown by the all-cargo carriers increased 1.8 percent in 2015 while total RTMs flown by passenger carriers grew by 3.6 percent.

U.S. carrier international air cargo traffic can be divided into four components consisting of Atlantic, Latin, Pacific, and 'Other International.' In 2015 total international RTMs increased 1.6 percent to 22.9 billion as growth in the Pacific region offset declines in the other three regions.

Historically, air cargo activity tracks with GDP. Additional factors that affect air cargo growth are fuel price volatility, movement of real yields, and globalization. Significant structural changes have occurred in the air cargo industry; among these are air cargo security regulations by the FAA and TSA, maturation of the domestic express market,

a shift from air to other modes (especially truck), use of all-cargo carriers (e.g., FedEx) by the U.S. Postal Service to transport mail, and the increased use of mail substitutes (e.g. e-mail, cloud-based services).

The forecasts of Revenue Ton Miles (RTMs) are based on several assumptions specific to the cargo industry. First, security restrictions on air cargo transportation will remain in place. Second, most of the shift from air to ground transportation has occurred. Finally, long-term cargo activity will be tied to economic growth.

The forecasts of RTMs were based on models that link cargo activity to GDP. Forecasts of domestic cargo RTMs were developed with real U.S. GDP as the primary driver. Projections of international cargo RTMs were based on growth in world GDP, adjusted for inflation. The distribution of RTMs between passenger and all-cargo carriers was forecast based on an analysis of historic trends in shares, changes in industry structure, and market assumptions.

After increasing by 2.2 percent in 2015, total RTMs are forecast to grow 4.5 percent in 2016 and driven by steady U.S. and world economic growth, total RTMs are projected to increase at an average annual rate of 3.5 percent for the balance of the forecast period.

Domestic cargo RTMs are forecast to grow 1.9 percent in 2016 as the U.S. economic recovery continues after posting a 3.3 increase in 2015. Between 2016 and 2036, domestic cargo RTMs are forecast to increase at an average annual rate of 0.4

percent. In 2015, all-cargo carriers carried 89.2 percent of domestic cargo RTMs. The all-cargo share is forecast to grow to 90.8 percent by 2036 based on increases in capacity for all-cargo carriers and ongoing security considerations.

International cargo RTMs grew 1.6 percent in 2015 after posting a 0.3 percent increase in 2014 as stagnation in Europe and a slowdown in China's economic growth slowed worldwide trade. Growth is expected to rebound in 2016 to 6.0 percent as global trade growth resumes. For the forecast period (2016-36) international cargo RTMs are forecast to increase an average

of 4.7 percent a year based on projected growth in world GDP with the Pacific region having the fastest growth, followed by the Other International, Atlantic, and Latin regions, respectively.

The share of international cargo RTMs flown by all-cargo carriers increased from 49.3 percent in 2000 to 71.8 percent in 2015. Continuing the trend experienced over the past decade, the all-cargo share of international RTMs flown is forecast to increase modestly to 78.1 percent by 2036.

## **General Aviation**

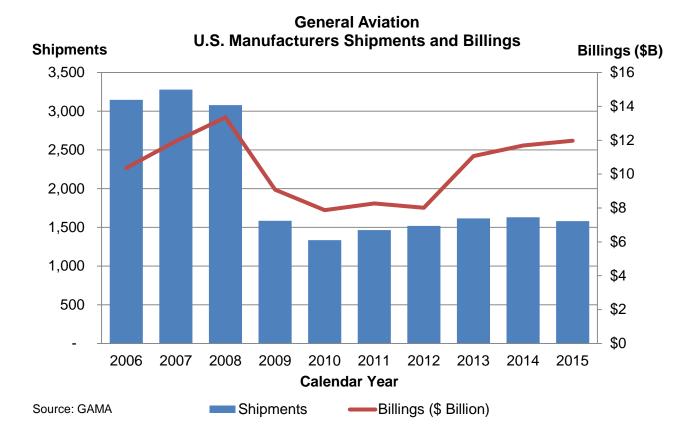
The FAA uses estimates of fleet size, hours flown, and utilization rates from the General Aviation and Part 135 Activity Survey (GA Survey) as baseline figures to forecast the GA fleet and activity. Forecasts of new aircraft deliveries, which use the data from General Aviation Manufacturers Association (GAMA), together with assumptions of retirement rates, produce growth rates of the fleet by aircraft categories, which are applied to the GA Survey fleet estimates. The forecasts are carried out for "active aircraft." not total aircraft. The FAA's general aviation forecasts also rely on discussions with the industry experts conducted at industry meetings, including four Transportation Research Board (TRB) meetings of Business Aviation and Civil Helicopter Subcommittees conducted annually in May and January.

The results of the 2014 GA Survey, the latest available, were consistent with the results of surveys conducted since 2004 improvements to the survey methodology. The 2014 Survey recorded the first increase to the GA fleet since 2007, particularly since the implementation of 2010 Rule for Re-Registration and Renewal of Aircraft Registration. The active GA fleet was estimated as 204,408 aircraft in 2014 (up 2.2 percent from 2013), with 23.3 million hours flown (up 1.7 percent from 2013).

In 2015, the general aviation industry experienced its first decline in deliveries since

2010. While the single engine piston aircraft deliveries by U.S. manufacturers continued to grow and business jet deliveries recorded a very modest increase compared to the previous year, turboprop deliveries were down by 10 percent, and much smaller category of multi-engine piston deliveries declined 40 percent. Based on figures released by GAMA, U.S. manufacturers of general aviation aircraft delivered 1,581 aircraft in CY 2015, 3.1 percent fewer than CY 2014. This was the first decline after four vears of growth in shipments that showed first signs of slowing down in 2014. Single engine piston deliveries increased by 3.4 percent in 2015, but the decrease in multiengine piston shipments caused a 0.6 percent decrease in overall piston airplane deliveries. In the turbine categories, turbojet deliveries were up by 0.8 percent. With the 10.0 percent decline in turboprop deliveries, total turbine shipments went down by 5.3 percent in 2015.

<sup>&</sup>lt;sup>3</sup> An active aircraft is one that flies at least one hour during the year.



GAMA and industry experts also reported significant decreases in rotorcraft deliveries in 2015, particularly resulting from direct and indirect effects of oil price declines.

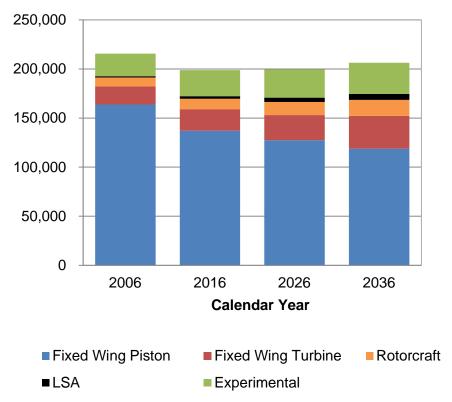
Against these current conditions, the long term outlook for general aviation, driven by turbine aircraft activity, remains favorable. The active general aviation fleet is projected to increase at an average annual rate of 0.2 percent over the 21-year forecast period, growing from an estimated 203,880 in 2015 to 210,695 aircraft by 2036. The more expensive and sophisticated turbine-powered fleet (including rotorcraft) is projected to grow by 15,600 aircraft -- at an average rate of 2.1 percent a year over the

forecast period, with the turbine jet portion increasing at 2.5 percent a year.

While steady growth in GDP and long term corporate profits impacts continued growth of the turbine and rotorcraft fleets, the largest segment of the fleet, fixed wing piston aircraft is predicted to shrink over the forecast period by 17,500 aircraft (at an average annual rate of 0.6 percent).

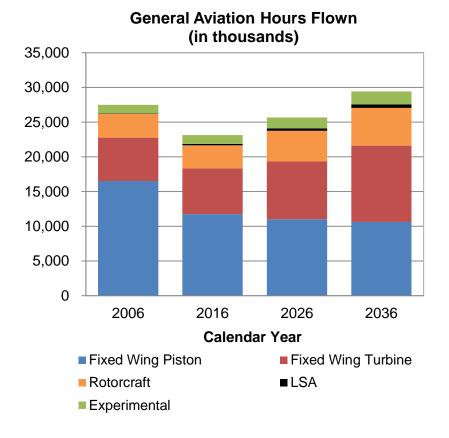
On the other hand, currently the smallest category, light-sport-aircraft, which was created in 2005, is forecast to grow by 4.5 percent annually, adding about 3,900 new aircraft by 2036, nearly tripling its 2014 fleet size.





Moderate fleet growth also impacts the number of general aviation hours flown, projected to increase an average of 1.2 percent per year through 2036. Following the decline in piston fleet, fixed wing piston hours are forecast to decrease by 0.6 percent. Countering this trend, hours flown by turbine aircraft (including rotorcraft) are forecast to increase 2.6 percent yearly over the fore-

cast period. Jet aircraft are expected to account for most of the increase, with hours flown increasing at an average annual rate of 3.1 percent over the forecast period. The large increases in jet hours result mainly from the increasing size of the business jet fleet, along with continuing increase in utilization rates, as indicated by the GA Survey.



Rotorcraft activity, which was not as heavily impacted by the previous economic downturn as other aircraft and rebounded earlier, faces the challenges brought by lower oil prices. They impact utilization rates and new aircraft orders both directly through decreasing activity in oil exploration, and also through associated slowdown in related economic activity. Rotorcraft hours are projected to grow by 2.5 percent annually over the forecast period.

Lastly, the light sport aircraft category is forecasted to see an increase of 5.0 percent a year in hours flown, primarily driven by growth in the fleet.

The FAA also conducts a forecast of pilots by certification categories, using the data compiled by the Administration's Mike Monroney Aeronautical Center. There were 590,039 active pilots certificated by FAA at

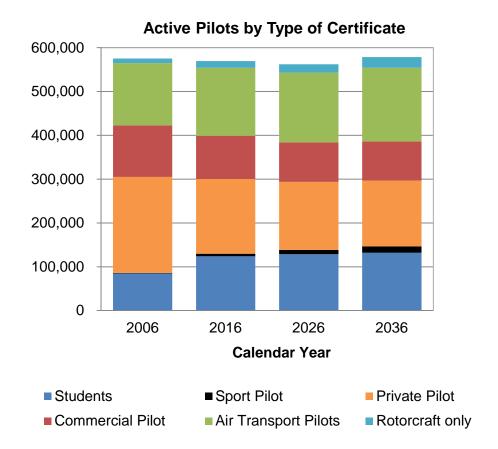
the end of 2015. While private and commercial pilot categories kept their declining trends, student pilot certificates continued to increase. One regulatory change that affected the number of student pilot certificates was the 2010 rule that increased the duration of validity for student pilot certificates for pilots under the age of 40 from 36 months to 60 months. Since 2011, the student pilot numbers have been rising and reached 122,729 in 2015.

Another change in the legislation impacted commercial and air transport pilot (ATP) certificates. The Airline Safety and Federal Aviation Administration Extension Act of 2010 mandated that all part 121 (scheduled airline) flight crew members would hold an ATP certificate by August 2013. The airline pilots holding a commercial pilot certificate and mostly serving at Second in Command positions at the regional airlines could no

longer operate with only a commercial pilot certificate after that date, and the FAA data showed a faster decline in commercial pilot numbers, accompanied by a higher rate of increase in ATP certificates.

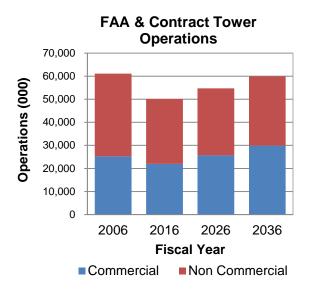
The number of active general aviation pilots (excluding ATPs) is projected to decrease about 5,000 (down 0.1 percent yearly) over the forecast period, while the ATP category

is forecast to increase by 13,600 (up 0.4 percent annually). The student pilots are forecast to increase by 0.3 percent and much smaller category of sport pilots are predicted to increase by 4.8 percent annually over the forecast period. On the other hand, both private and commercial pilot certificates are projected to decrease by 0.6 percent yearly until 2036.



# **FAA Operations**

The growth in air travel demand and the business aviation fleet will drive growth in operations at FAA facilities over the forecast period. Activity at FAA and Contract towers is forecast to increase at an average rate of 0.9 percent a year between 2016 and 2036. Commercial operations<sup>4</sup> at these facilities are forecast to increase 1.5 percent a year, 5 times faster than non-commercial operations. The growth in commercial operations is less than the growth in U.S. airline passenger traffic (1.5 percent vs 2.0 percent) over the forecast period due primarily to larger aircraft (seats per aircraft mile) and higher load factors. Both of these trends allow U.S. airlines to accommodate more passengers without increasing the number of flights. General aviation operations (which accounted for 52% of operations in 2015) are forecast to increase an average of 0.3 percent a year as increases in turbine powered activity more than offset declines in piston activity.



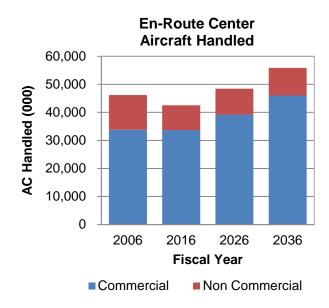
FAA Tracon (Terminal Radar Approach Control) Operations<sup>5</sup> are forecast to grow slightly faster than at towered facilities. This is in part a reflection of the different mix of activity at Tracons. Total operations are forecast to increase an average of 1.1 percent a year between 2016 and 2036. Commercial operations accounted for approximately 59 percent of Tracon operations in 2015 and are projected to grow 1.5 percent a year over the forecast period. General aviation activity at these facilities is projected to grow only 0.4 percent a year over the forecast.

Activity at FAA En-Route Centers is measured by the number of IFR aircraft handled.

<sup>&</sup>lt;sup>4</sup> Sum of air carrier and commuter/air taxi categories.

<sup>&</sup>lt;sup>5</sup> Tracon operations consist of itinerant Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) arrivals and departures at all airports in the domain of the Tracon as well as IFR and VFR overflights.

In 2015, aircraft handled at FAA En-Route Centers increased 1.4 percent, led by increases in the Air Carrier and General Aviation categories. Growth in airline traffic and business aviation is expected to lead to increases in activity at En-Route centers. Over the forecast period, aircraft handled at En-Route centers are forecast to increase at an average rate of 1.4 percent a year as increases in Air Carrier and General Aviation activity offset declines in Air Taxi activity. Activity at En-Route centers is forecast to grow much faster than activity at towered airports because more of the activity at En-Route centers is from the faster growing commercial sector and high-end (mainly turbine) general aviation flying. Much of the general aviation activity at towered airports, which is growing more slowly, is local in nature, and does not impact the centers.



# U.S. Commercial Aircraft Fleet

The number of aircraft in the U.S. commercial fleet is forecast to increase from 6,871 in 2015 to 8.414 in 2036, an average annual growth rate of 1.0 percent a year. Increased demand for air travel and growth in air cargo is expected to fuel increases in both the passenger and cargo fleets.

Between 2015 and 2036 the number of jets in the U.S. mainline carrier fleet is forecast to grow from 3,946 to 5,339, an average of 66 aircraft a year as carriers continue to remove older, less fuel efficient narrow body aircraft. The narrow body fleet (including Eseries aircraft at American and JetBlue) is projected to grow 51 aircraft a year as carriers replace the 757 fleet and current technology 737 and A320 family aircraft with the next generation MAX and Neo families. The wide-body fleet grows by an average of 15 aircraft a year as carriers add 777-8/9, 787's, A350's to the fleet while retiring 767-300 and 777-200 aircraft. In total the U.S. passenger carrier wide-body fleet increases by 60 percent over the forecast period.

The regional carrier fleet is forecast to decline from 2,144 aircraft in 2015 to 1,961 in 2036 as the fleet shrinks by 21 percent (448

aircraft) between 2015 and 2022. Carriers remove 50 seat regional jets and retire older small turboprop and piston aircraft, while adding 70-90 seat jets, especially the E-2 family after 2020. By 2025 only a handful of 50 seat regional jets remain in the fleet. By 2036, the number of jets in the regional carrier fleet totals 1,786, up from 1,628 in 2015. The turboprop/piston fleet is forecast to shrink by two-thirds from 516 in 2015 to 175 by 2036. These aircraft account for just 8.9 percent of the fleet in 2036, down from 24.1 percent in 2015.

The cargo carrier large jet aircraft fleet is forecast to increase from 781 aircraft in 2015 to 1,114 aircraft in 2036 driven by the growth in freight RTMs. The narrow-body cargo jet fleet is projected to increase by 2 aircraft a year as 757's and 737's are converted from passenger use to cargo service. The wide body cargo fleet is forecast to increase 14 aircraft a year as new 747-800, 767-300, and 777-200 aircraft are added to the fleet, replacing older MD-11 and 767-200 freighters.



